UNION CARBIDE

NUCLEAR DIVISION NEWS

A Newspaper for Employees of the Nuclear Division, Union Carbide Corporation

Vol. 5 — No. 6 March 21, 1974

QUESTION BOX

If you have questions on company policies, benefits, etc. or any other problems with which we might help, just let us know. Drop your inquiry to the Editor, Nuclear Division News. *(Or telephone it in to your plant news representative.) You may or may not sign your name. It will not be used in the paper.*

Questions are referred to the proper authorities for accurate answers. Each query is given serious consideration for publication.

Answers may be given to employees personally if they so desire.

QUESTION: Is anything to be done about the sound system at the Carbide Christmas parties? I have, with different children, been attending for the past 10 years, and it seems to me the sound system gets worse every year.

ANSWER: It is true that problems have been experienced in the past with the loudspeaker system in the auditorium of the Oak Ridge High School. Attempts have been made each year to correct this problem, which have been unsuccessful. The projection and speaker equipment is old and is seldom used. Plans have already been made to install our own equipment for future Christmas parties.

QUESTION: Has any consideration been given to operating a bus to the plants? Even if they had to be subsidized in the beginning (which I doubt), it would still be more practical, economical, and desirable than car pools or driving alone.

I'm sure many of us would be happy to drive to a central point in Oak Ridge since we could still save over 100 miles per week, which is a lot of fuel.

Parking at these central points should be no problem. Churches and private clubs have adequate space that is not used during week-day working hours.

ANSWER: We understand that approval is being sought to provide bus service between northwest Knoxville and the Y-12 Plant. With this exception, no serious consideration is being given to bus service from Oak Ridge and other communities to our facilities in Oak Ridge.

Under present circumstances, a massive busing effort would present many unanswered questions: Where would the buses come from? Who would operate such a system? Would enough employees be willing to use the service? Who would pay the deficit if there were one?

Since car-pooling is much more convenient and can produce significant energy savings, the Company feels it is the most appropriate approach under present circumstances.

QUESTION: How many women and minorities are enrolled in the Union Carbide management course?

ANSWER: Two women and one minority employee are currently enrolled in the UCC Management System Course. The Union Carbide Management System indoctrination has cascaded down the organization, beginning with UCC officers about two years ago. The current phase of the instruction is designed primarily for managers at or above the department superintendent level or its equivalency.

QUESTION: When management gave out the results of the attitude survey did they only talk on the points that weren't too bad, or did they cover all aspects of the survey? Also I would like to know if any positive results will come out of the survey, or did Carbide just waste a lot of money?

ANSWER: We tried to cover all aspects of the survey without any attempt to bias the report one way or the other. Task forces have been appointed in each operating division and, where indicated, on a facility or Nuclear Division basis to analyze the results and recommend actions in areas where deficiencies had been revealed by the survey. Whether or not the survey was a waste of money will depend on actions taken by the Company as a result of it. This will have to be judged by each of us after a reasonable amount of time, say six months to a year, has passed.

QUESTION: When will the Y-12 and K-25 Credit Unions offer its employees the EPIC car insurance? I understand the ORNL Credit Union made this offer in November, through the Aetna Insurance Company.

ANSWER: While the ORNL Credit Union does offer this service, we understand that only a small number of employees have enrolled at this time. There is some controversy as to whether a credit

(Continued on page 8)

ORGDP's traffic problems bring about positive efforts

Accelerated by an expansion program and an increase in plant population, traffic conditions at the Oak Ridge Gaseous Diffusion Plant have been attracting more and more attention. With this increase in activity has come the presence of contractor personnel involved in the Cascade Improvement Program.

Management at ORGDP has been taking positive action to alleviate many of the problems.

A traffic safety committee was established and is functioning in receiving, evaluating, and making recommendations on suggestions submitted by plant personnel.

Engineering has been instructed to survey plant needs with regard to traffic safety and to carry out plans to improve traffic patterns, traffic flow and parking facilities.

Traffic safety stressed

The safety and security departments are engaged in promoting and enforcing traffic safety in the plant. Safety meetings are held to emphasize the need for traffic safety and to train and motivate people to drive with extra care.

Plant management is working with city and state traffic officials, as well as with the Atomic Energy Commission, to improve the physical layout of the roads to and from ORGDP and to enforce existing traffic rules and regulations by motor vehicle operators.

As a result of these concerted efforts, many improvements have already been implemented. Included in these accomplishments are:

Parking facilities have been improved in several parking lots. One new lot has been added and extra parking spaces have been provided in other lots. (Further improvements are scheduled.)

Improvements made

Lighting has been improved with the installation of street lights at plant entrances, parking lots, and at Blair Road - Oak Ridge Turnpike intersection.

A new policy has been adopted recently which includes the establishment of a safety speed limit in the plant. Pedestrians have been given the right-of-way in designated crosswalks. A plan is being formulated to deal with violators of speeding and parking regulations.

Improvements are being made at several heavily travelled intersections; traffic signals are being remarked and upgraded; and additional traffic signs are being installed.

Pick-up shelters have been received. These shelters will be installed to protect employees from inclement weather while waiting on rides.

Many other miscellaneous actions are being taken to help solve the traffic safety problems.

(Continued on page 8)

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NEW LIGHTS AT BLAIR — The installation of lights at the intersection of Blair Road and the Oak Ridge Turnpike has improved the visibility of vehicle operators, particularly in the early morning hours.

Air conditioners - compare before you buy

By John C. Moyers

Are you planning to purchase a window air conditioner to ward off the hot, sticky days and nights of summer? If you are, you should consider more than size and price in making your selection. The amount of electricity that different models consume in providing the same amount of cooling varies widely. In these days of energy shortages, summer brownouts and rising costs of electricity, the selection of an efficient air conditioner will ease the load on the utility and, at the same time, reduce your utility bills.

The efficiency of an air conditioner (sometimes called "Energy Efficiency Ratio" or EER) is expressed in terms of British thermal units of cooling per watt-hour of electricity consumed (Btu/W-hr). This efficiency can be determined from data stamped on the nameplate by dividing the Btu's per hour rating by the wattage. Among the 1200 or so models on the market, the efficiency varies from 4.9 to 12.2 Btu/W-hr. In other words, the electricity consumed by the lowest efficiency model is 2.5 times that consumed by the highest efficiency model, for the same amount of cooling.

High efficiency groupings

Interestingly, the highest efficiencies are found in two groupings of large 115-volt models. This is illustrated in the figure below that shows the efficiency of each available model having a rating of 24,000 Btu/hr or less. The first high efficiency grouping includes models that draw 7.5 amps of current and are rated at 9,000 to 10,000 Btu/hr. The second grouping includes models that draw 12 amps and have ratings of 13,000 to 14,000 Btu/hr.

The reason for these groupings is a marketing consideration. Single-appliance currents of 7.5 amps for general-purpose household circuits or 12 amps for single-purpose circuits are permitted by the National Electric Code. The highly marketable, large capacity, 115-volt machines can meet the circuit loading requirements only if they have high efficiencies. Smaller units don't overload the circuits and larger ones require 230-volt circuits, so the need for high efficiency doesn't exist outside these groupings.

High-efficiency models are usually somewhat larger, heavier and more expensive to buy than those with lower-efficiency. This is because higher efficiencies are obtained by using some combination of larger condenser and evaporator coils, larger blowers and high-efficiency compressors.

The economic justification for paying more initially for a high-efficiency model depends on the price paid for electricity and the interest rate that applies to the purchaser's finances. At the current electricity price in Oak Ridge (1.137 cents per kilowatt-hour for all over 500 kilowatt-hours per month), a reduction of 100 watts in the power consumption rate of an air conditioner reduces the annual cost of electricity by approximately $1.14. Assuming that the purchaser withdraws the money to purchase the air conditioner from a savings account that pays 6 percent interest and that the machine will last for 10 years, he would be justified in paying $8.39 more for a machine that consumes 100 watts less electricity. If, instead, the air conditioner is purchased through a credit card account that carries an annual interest rate of 18 percent, he is justified in paying only $5.12 more to save 100 watts.

Cost more but consume less

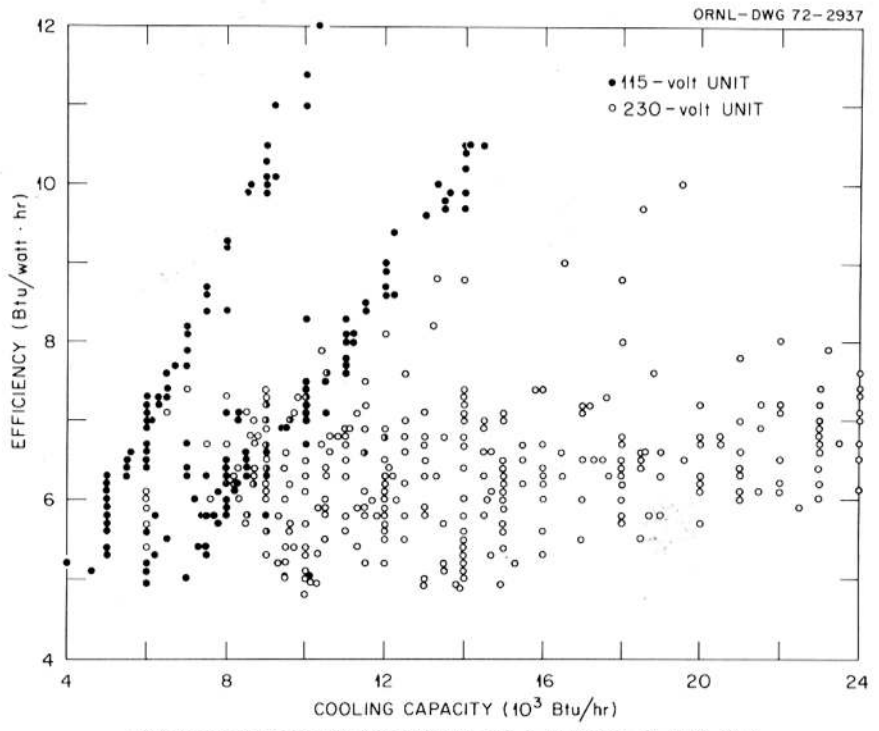
As an example, one large retail outlet currently offers two models rated at 13,000 Btu/hr. One model consumes 1380 watts (efficiency = 9.4 Btu/W-hr.) and has a price of $314.50. The other model consumes 2170 watts (efficiency = 6.0 Btu/W-hr) and has a price of $268.50. The first model would consume 790 kW-hr less electricity each year, saving $9 per year. Evaluated over 10 years at an interest rate of 6 percent, the cumulative saving in electricity cost would be $66, or $20 more than the $46 extra initial cost for the more efficient model. The 10-year cumulative saving evaluated at 18 percent interest rate is only $40, or $6 less than the extra initial cost.

Although the high-efficiency model isn't quite justified for the credit card purchaser at today's power price, increases in power prices that are predicted for the next few years will surely change the situation. (The Oak Ridge rate increase that became effective in January was 18.4 percent in the rate block applicable to an air conditioner; another increase of that magnitude would justify the high-efficiency model.)

Energy saved by improved efficiency

An improvement in the average efficiency of all window air conditioners in the country would save an appreciable amount of electrical energy. In 1972, the 30 million units in use consumed approximately 51 billion kW-hr. If the average efficiency had been 10 instead of 6 Btu/W-hr, they would have consumed only 31 billion kW-hr, a saving of 20 billion kW-hr. That saving is equivalent to 8.75 million tons of coal or 36 million barrels of crude oil (about 2 days of total U.S. oil consumption).

So, in the interest of conserving energy, fuel resources and, possibly, your hard-earned money, compare wattage before you buy. Remember that a 100-watt saving is worth from $5.12 to $8.39 in power bill savings over the life of the unit.



Efficiency of Room Air Conditioners as a Function of Unit Size.

Edwards mans post in Red Cross drive


Edwards

Arthur K. Edwards, Paducah Plant Industrial Relations Superintendent, has been named chairman of the industrial division committee for the American Red Cross Paducah-McCracken County fund drive.

Edwards has set as his goal $10,250, more than a quarter of the entire chapter's goal. The drive began March 1.

PATENTS Granted

To George I. Cathers, ORNL, and Calvin J. Shipman, ORNL retiree, for "Removal of Iodine from Nitric Acid Solutions."

To Wayne F. Johnson, ORNL, for "Miniature Multistation Photometer Rotor Temperature Control."

To William J. Werner, ORNL, for "Fluxless Aluminum Brazing."

To Charles R. Schmitt, Y-12, for "Method for Preparing Hollow Metal Oxide Microspheres."

Culler receives honor during engineers week

Floyd L. Culler Jr., Deputy Director of Oak Ridge National Laboratory, was recently presented the "Outstanding Achievement Award" by the engineering and technical community of Oak Ridge.

The presentation was made at a banquet during Engineers Week, by Robert J. Hart, manager of AEC-ORO. The award included a plaque carrying the signatures of Hart, Dixy Lee Ray, chairman of the Atomic Energy Commission, and Aubrey J. Wagner, chairman of the Tennessee Valley Authority.

The organizations sponsoring the award were: American Society of Civil Engineers, American Society of Certified Engineers Technicians, American Society of Heating, Refrigerating and Air Conditioning Engineers, Inc., American College of Surveyors, American Institute of Architects, American Institute of Chemical Engineers, The Institute of Electrical and Electronics Engineers, Inc., Instrument Society of Professional Engineers, American Institute of Industrial Engineers, Inc., The American Welding Society, The American Society for Metals, The American Society of Mechanical Engineers, The American Society for Nondestructive Testing, Inc., and American Society of Safety Engineers.

Culler, a chemical engineer by profession, has worked in the Oak Ridge facilities since 1943, and has served in several capacities at ORNL since 1948.

OUTSTANDING ACHIEVEMENT AWARD — Floyd L. Culler, Deputy Director of ORNL, accepts a plaque for outstanding achievement from Robert J. Hart, manager of AEC's Oak Ridge Operations. Culler was chosen as recipient of the award by the engineering and technical community of Oak Ridge.

TV APPEARANCE — Nancy R. Hunley, mechanical design engineering in the Y-12 Plant, appeared recently on the "Carol Utley Show," on Channel 10, Knoxville. Also appearing on the morning talk show were Jane Black, an engineer with the Tennessee Valley Authority, and Gail Johnson, executive director of the Tennessee Society of Professional Engineers. The three discussed engineering as a profession for women and saw no conflict in its pursuit along with homemaking.

TV appearance by engineer sparks Carol Utley's show

The glamor and excitement of the space age lured Nancy R. Hunley into the world of engineering. So the Y-12 Plant mechanical engineer told television audiences recently.

Mrs. Hunley, along with two other professional women, appeared on the "Carol Utley Show," during Engineers' Week. Jane Black, another woman engineer, who works for the Tennessee Valley Authority; and Gail Johnson, executive director of the Tennessee Society of Professional Engineers, gave glowing reports on their jobs on the Channel 10 talk show, telecast from Knoxville.

Mrs. Hunley, who was Nancy Rivers then, attended high school near the space center in Florida. She later co-oped at the National Aeronautics Space Administration, Huntsville. Her engineering studies were pursued at the University of Alabama.

After graduation, the engineer went to work with TVA in Knoxville. It was there she met her husband, Alan, a civil engineer.

None of the three women voiced support of Women's Liberation, although they all agreed that individual rights must be guaranteed. "I'm a rather conservative person, both personally and politically," Mrs. Hunley admitted. She saw no conflict in a career, and home and family responsibilities. "They can be compatible," she said.

Mrs. Hunley joined Union Carbide at Oak Ridge National Laboratory after her marriage, in 1972. She transferred to Y-12 last September.

Her sparkling appearance on the Utley show was only one part of the excitement to come her way lately. She was just informed that she had passed all necessary tests, and is now a licensed professional engineer in the State of Tennessee!

The Hunleys live at 10209 Doyle Lane, Concord.

Jerrell and Garrison promoted at Paducah

Garrison Jerrell

The promotion of Voris E. Jerrell and James D. Garrison to process foremen has been announced by Al M. Tuholsky, superintendent of the Paducah Plant's Power, Utilities and Chemical Division.

Jerrell, a native of Ballard County, Ky., graduated from Kevil High School and attended the University of Kentucky. He joined the Paducah Plant in 1952, after working with the Modine Manufacturing Co. He lives at 1408 Piedmont Street with his wife Inez, and son Barry Keith.

Garrison joined Union Carbide in 1953, after having worked for F. M. McGraw Construction Co., the contractor that constructed the Paducah Plant. Garrison, a native of Arkansas, attended Southeastern Missouri State College. He is an accomplished organist. Garrison, his wife Eileen, and daughters, Vickey and Tammy, live at 853 Second South Street, Mayfield, Ky.

Happy Numbers

For anyone who still thinks that cancer is always fatal, the American Cancer Society reports that there are 1,500,000 Americans alive today who are cured of cancer. They know that cancer is most curable when caught early and you should too.

J.E. Turner named associate director of health physics

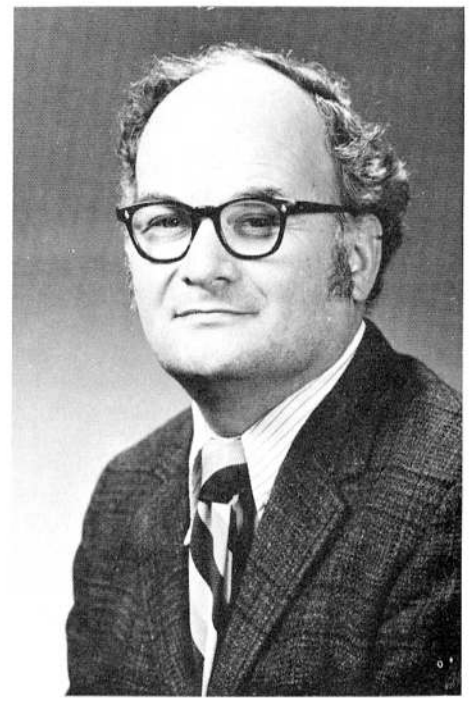
James E. Turner has been named associate director of the Health Physics Division at Oak Ridge National Laboratory. He succeeds Walter S. Snyder who recently retired.

Turner was born in Norfolk, Va., and grew up in Savannah, Ga. His educational background includes an A.B. degree in physics from Emory University; an M.S. in industrial hygiene from Harvard University; and the Ph.D. degree in physics from Vanderbilt University. He also did graduate study as a Fulbright Scholar at the Georg August University, Gottingen, Germany.

Turner joined the staff at ORNL in 1962. He previously worked as an instructor of physics at Yale University and as a radiological physicist with the U.S. Atomic Energy Commission.

Just prior to his present assignment, Turner served as chief of the education and information section in Health Physics. He helped organize the Division's long range planning committee and served as chairman for two years. He was a consultant for the World Health Organization at the Bhabha Atomic Research Centre, Bombay, India, in 1967 and 1973. He also spent a year on assignment from ORNL at CERN, the joint European laboratory for high energy physics in Geneva, Switzerland.

Turner has taught physics at Vanderbilt University and at The University of Tennessee on a part-time basis during his tenure at ORNL. He has authored or coauthored a book and many technical papers, and was certified by the American Board of Health Physics in 1966.



James E. Turner

Turner and his wife, the former Renate Gerike of Germany, and their three children reside at 127 Windham Road, Oak Ridge.

COMPANY Service 20 25 30

PADUCAH
30 YEARS

Two Paducah employees, Charles S. Maxwell, instrument department; and Marvin S. Lisso, plant engineering, crossed the 30-years-of-company service mark. Both worked at ORGDP prior to transferring to Paducah in 1951.

Y-12 PLANT
30 YEARS

Verney O. Sharp, production assay; L.P. Vines, H-2 and F-area shops; John G. Smith Jr., advance systems preproduction; William D. Burger, buildings, grounds and maintenance shops; Morris K. Fortenberry, program engineering-production; William H. Ward, chemical services; Lester E. Burkhart, laboratory development; Ross L. Jamison, production analysis; Jack M. Case, Superintendents Division; Ralph H. Ford, chemical services; Wofford M. Akers, electrical and electronics; and Benjamin B. Stanton Jr., mechanical inspection.

25 YEARS

Dell C. Reed and Edgar Reagan.

20 YEARS

James C. Chamblee, Velky D. Boyd, Donnie A. Mingis, Gerald W. Holcomb, Thomas W. Bailey Jr., James F. Paschall, Charles F. Phillips, Edward S. Heath, Everett R. Ballew, Arthur Mitchell, John P. Noland, Roy C. Stone, Wayne W. Thompson, James B. McCoy, Robert F. Long, James L. Hunnicutt, Ralph H. Allen, Dewey L. Foulk and Irene V. Ellison.

ORGDP
30 YEARS

Glenn S. Blackburn, plant electricity distribution; A. Allene George, metallurgy department; Carroll H. Easler, Oak Ridge area electricity distribution; Henry J. Culbert, SS material handling-U-235 separation; and Charles E. Cross, guard department.

25 YEARS

John W. Bishop.

20 YEARS

John T. White, William H. West, Johnny S. Taylor and Billy J. Robbins.

GENERAL STAFF
30 YEARS

James D. Bowers Jr., management information systems; James T. Coffey, computer operations; and Duncan M. Lang, Operations Analysis and Planning.

20 YEARS

John C. Lauderdale Jr.

ORNL
30 YEARS

Claude E. Coile, Plant and Equipment; John L. Horton, Instrumentation and Controls; George M. Banic Jr., Isotopes; Orville D. Matlock, Thermonuclear; Howard V. Klaus, Operations; and Thomas B. Nixon, Operations.

THE LAST WORD

The world is moving so fast these days that the man who says it can't be done is generally interrupted by someone doing it.

'Last month we graduated three people and sent them out to LIFE'

By Charles A. Blake

In a large room on the third floor of Siloam Presbyterian Church in Brooklyn, N.Y., about 30 young men and women entered in groups of two or three, chatted quietly for a few minutes, and then took seats in a large circle of chairs. Over in the corner, we, the Nuclear Division's five affirmative action coordinators, talked with Thom Turner, who is the Director of the "Bed-Sty" Street Academy which we were visiting. Then, one of the teachers asked the students to stand and join hands for a moment of fellowship and meditation. A couple of students turned to us, held out their hands, and invited us to join the circle. We did, and for the next several hours we were a part of the student body. For us it was a new learning experience.

The Bed-Sty Street Academy which is sponsored by Union Carbide Corporation is the section of Brooklyn called Bedford-Stuyvesant, which is the nation's second largest black community with a population of 450,000 living in a 653-block area. To get there, we had taken a half-hour subway ride from Manhattan on the "A" train. If we had traveled in the other direction we would have gone to Harlem and that's the trip which Duke Ellington made famous in his "Take The A Train."

Successful graduates

The Academy is one of seven in New York which are sponsored by private companies in association with the New York public school system and the Urban League. The program has been developed to combat the wastefulness and tragedy of the 40 to 60 percent dropout rate in high schools located in urban ghetto communities. The students are minority youth in the 14-18 age level who have dropped out or have been forced out of the public school system. Although the number of street academies and the methods of operation have changed since their beginnings in about 1967, their operation has been continuous and, so far, there have been 475 graduates who are gainfully employed. There are presently 600 students enrolled in the system and 50 professional people on the teaching and administrative staffs.

There are 80 students in the Bed-Sty Academy which has formal ties to nearby Boys High School. The Academy is used as an alternative method of education for students presently enrolled at Boys High, as well as those who have already dropped out of the system. In this program, teachers from Boys High work with the staff of the Street Academy to exchange methods and ideas to motivate and teach youth who are in conflict, or otherwise out of communication with the system.

Different classes

We had known these facts before we visited the Academy, but in no way could we tie these bright students with the usual sterotypes of "dropout" or "expelled problem student."

We sat in on classes in algebra, American history and nutrition. Student participation in the class activities was enthusiastic. There were only two blackboards for three classes and the solution to this problem was mind-boggling. One blackboard was fixed to a wall, but the other was a free-standing, two-sided one like those used for seminars on stages or in front of rooms with no other writing space. The board was set up in the middle of the room with one class on each side. Students were working algebra problems on one side of this small board while one of the teachers was discussing vitamin chemistry on the other. The noise level was high, but the level of concentration was terrific.

What has turned these students on to education when only a short time before they were really turned off? For one thing, after dropping out many of them learned that an education was a necessity and heard that the Academy provided another chance for getting one. For another, once in the Academy, the students learn that it is their school. (They asked us to join their circle, the teachers didn't.) There is an active and strong student council which sets regulations and sees that these are carried out. The council's rules are tough, harder sometimes than those the staff would institute. Each new student spends the first week learning the rules. Attendance during this week is voluntary; after that all absences are reviewed. There is no smoking. Problems are shared. Students with old drug habits are helped. Students are being successfully discouraged from starting new drug habits. All of this is certainly a part of the reason for success.

VISIT STREET ACADEMY — James M. Seivers, Y-12; Al Burris, ORGDP; and Earl Nash, ORNL then (now in Central Employment); and Frank Shanklin, Paducah, from left, stand in front of the Street Academy while Charles Blake, General Staff, snaps the picture. Thom Turner, the Academy's Director says "... we still talk about the day 'people from Tennessee and Kentucky came'."

Visit original school

Then, there is parental support. We were told that about half the parents show up for meetings between staff and parents and that when the students participate in the meetings about 80 percent of the parents attend. But when there is a crisis at the school (funding problems, selection of teachers, etc.), then all of the parents show up and they work to help solve the problem.

Under these conditions, about 80 percent of the students who enroll graduate from high school, and about 80 percent of the graduates go on to college or into productive jobs.

After sitting in on these classes, Thom Turner took us to one of the Academy's other buildings, the "original" store-front school which was once a liquor store and appears in the accompanying picture. Here we saw a reading laboratory. The equipment can be used for remedial reading and for improving reading habits at the highest level. Thom also told us that students at the school are involved in other creative activities, which are not a part of the formal curriculum. There is, for example, a group of students who write, produce and act in plays. During the summer the group goes "on the road." One of the students has had some movie roles. He continues to attend the Academy, because he now has to read and study his scripts; he sees a need to be able to read! In another building, which is used as a study hall, a man teaches karate to the students at night in return for his use of the room to run a karate school for paying customers.

We learned a lot about the Academy, but there is much more to learn and to share. There is one frustrating thing - there are only 600 students in the city of New York who are enrolled. In 1969 there were almost one and a quarter million 18- and 19-year-olds in the United States who had dropped out of school before finishing 10th grade. That's over 18 percent of all the young people in that age bracket. Over 200,000 of these had not even finished grammar school.

But Union Carbide, working to keep young people from dropping out of school in the first place, has joined with New York's Economic Development Council in the School Partnership Program. In this program, Carbide has one employee assigned full time at James Monroe High School. Here, with two other representatives from business, students are counseled, encouraged to achieve, and administrators and faculty are assisted in problem-solving.

Specific achievements include reduction in violence, development of successful anti-drug programs led and managed by students, introductory courses in career exploration and guidance for ninth graders, strengthening of curriculum for tens of thousands of Spanish-speaking youngsters who are deficient in English, and career and skills development programs for teachers and administrators.

'A lot to do'

George Washington School, the first school to have this program, has been open every day since 1971. It was closed 20 percent of the time in the spring of 1970 because of violence. The attendance record of students in alternative programs at George Washington is now 88 percent as opposed to less than 20 percent two years ago. Student attitudes toward drugs have taken an about-face in Monroe and

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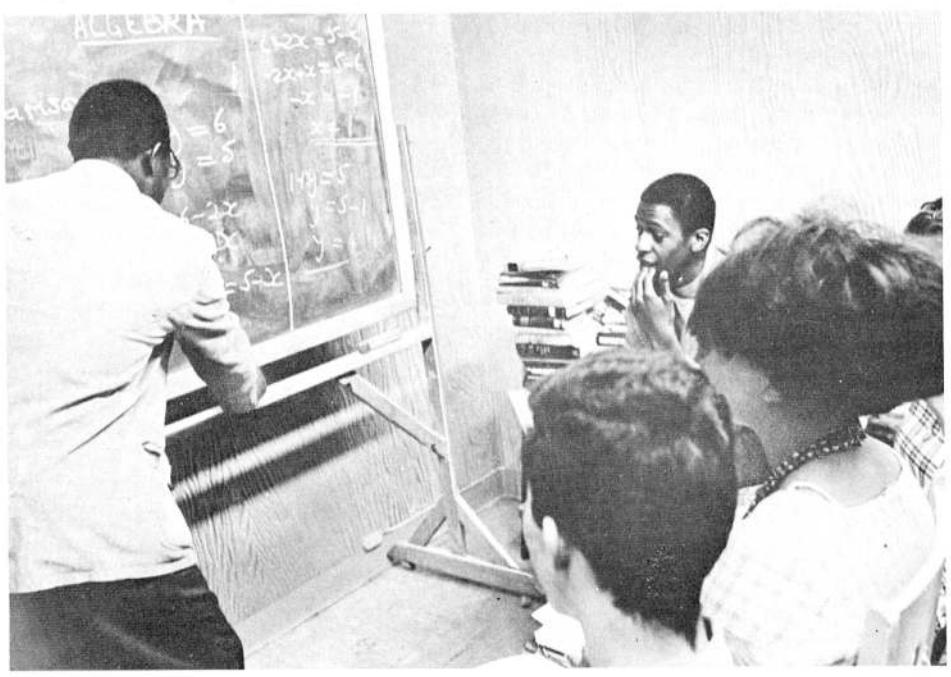
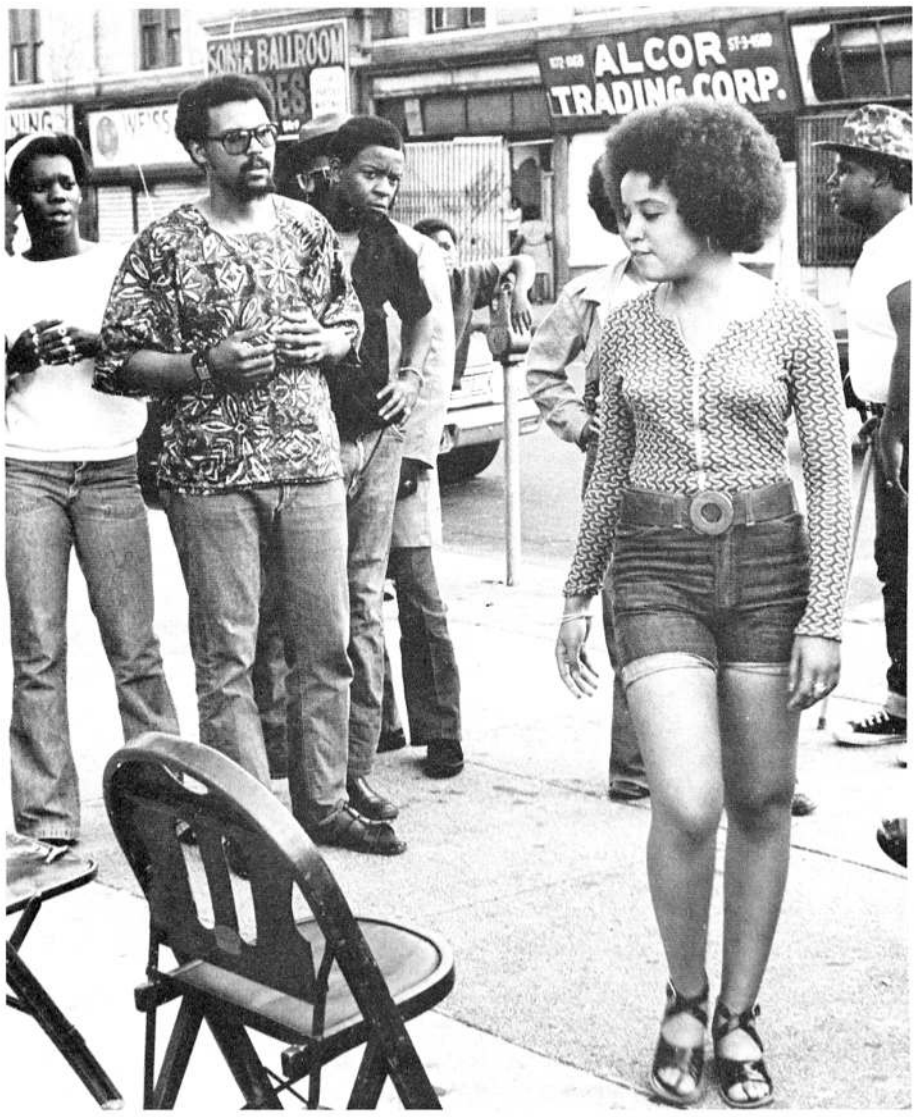


ALGEBRA CLASS — An algebra class in Carbide's Bed-Sty Academy. Nearly 1,000 students who had dropped out or had been forced out of the school system have graduated from the several street academies and have gone into college or are now gainfully employed.



DRAMA WORKSHOP — Students participating in a dramatic workshop while Thom Turner, the Academy's Director, at left, coaches. They are rehearsing on the sidewalk in front of the Academy. Students write, produce, and act in plays which they take "on the road."

Street academy

(Continued from page 4)

George Washington High Schools. English-as-a-second-language (ESL) programs have been introduced at both schools.

The Street Academy and the School Partnership are significant factors in urban problem solving and Union Carbide is a major participant in both programs.

Thom Turner sent us a letter recently which, in three sentences, sums up the value of the program. "Last month we graduated three people and sent them out to life. One went away to school and the other two got jobs. We have a lot of work to do here, and we are confident that we can do it."

A wise man will make more opportunities than he finds.

Bacon

Power squadron sets spring boating classes

The Oak Ridge Power Squadron will begin its spring classes March 26, at 7:30 p.m., in A-217 at the Oak Ridge High School. The classes are free and will run 10 weeks.

James H. Rowan, Y-12, is commander; Norm W. Snow, ORGDP, is educational officer; and Harry S. Corey, Y-12 is public relations officer.

The entire family is invited to participate in the classes. All persons operating boats should learn the rules of the road, required Coast Guard equipment, safe boat handling and common boating courtesy taught by the Squadron.

Fuller and Teasley promoted to new jobs

Robert R. Fuller J. D. Teasley

Robert R. Fuller and J. D. Teasley were recently promoted to maintenance foremen in the Paducah Plant's Fabrication and Maintenance Division, according to Robroy Millican, division superintendent.

Fuller, a native of Paducah, graduated from Tilghman High School where he was active in vocational training. He worked with Illinois Central prior to joining Union Carbide in 1951.

Fuller, his wife Jo Ann, daughters Bobbie and Teressa, and son, Roger, live at 250 Springwell Lane, Paducah.

Teasley, who is a native of Carlisle County, Ky., graduated from Cunningham High School and has had training in pipe fitting and blueprint reading. He was employed by the Fluor Corporation, of Calvert City, Ky., prior to joining Union Carbide in 1955.

Teasley lives in Cunningham with his wife, Dorothy and sons, Gary and Gregory.

THE LAST WORD

The reason talk is so cheap is because the supply exceeds the demand.

Division Retirees

Dalton Mrs. Householder

Mrs. McMullen Mrs. Posey

James T. Dalton, capacity expansion in the Engineering Division, retired at the end of February from Oak Ridge Gaseous Diffusion Plant. He joined Union Carbide January 2, 1946, and lives at 321 Victor Drive, Knoxville. He plans to retire to Redington Beach, Fla.

Irene S. Householder, General Accounting Division, will retire April 1. A payroll clerk in general accounting, she lives at 1307 Wilson Road, Knoxville. Mrs. Householder was the former Irene Stephens.

Two Y-12 employees, whose combined company service exceeds 58 years, retired March 1. They are Irene Posey and Susie McMullen.

Irene Posey, nee Achoe, is a native of Newport, Tenn. She came to Y-12 May 5, 1944, and lives at 2416 Louise Street, Knoxville. She has worked in building services for 29 years.

Susie McMullen, the former Susie Miller, is a native of Chester, S.C. She came to Y-12 in building services September 21, 1944, and lives at 3620½ Lansing Avenue, Knoxville.

Mrs. Floyd Sizemore

Two long-time ORGDP employees retire at the end of March.

Hazel L. Floyd, in the data control center of the Finance and Materials Division, came to Union Carbide in 1945. She lives at 101 Palmetto Lane, Oak Ridge.

Ruby T. Sizemore, barrier development, lives at 106 Gorgas Lane, Oak Ridge.

Polston named foreman in ORGDP maintenance

James B. Polston has been made a road and grounds foreman in the Maintenance Division at the Oak Ridge Gaseous Diffusion Plant.

Polston

A native of Roane County, Polston joined Union Carbide at Y-12 as a planner and estimator, transferring to ORGDP last year. He has an M.S. degree from The University of Tennessee and a B.S. degree from Tennessee Technological University.

He and his wife, the former Barbara Gilmore, live at Route 3, Harriman. They have two children, Tisha and Tammy.

Fishing, hunting and camping occupy much of Polston's spare time. He also enjoys woodworking and reading.

Calendar of EVENTS

TECHNICAL

March 26-27

Environmental Sciences Division Annual Information Meeting. Central Auditorium, Building 4500N, 9 a.m.

March 27

Chemical Technology Division Seminar: "Heats of Transport and the Thermomonuclear Pressure Effect," A.P. Malinauskas. Central Auditorium, Building 4500N, 3 p.m.

March 28

ORNL Bi-Monthly Colloquium: "The Appalachian Strippers," Ed Nephew, ORNL-NSF Environmental Program. Jefferson Junior High School Auditorium, 7:30 p.m. Admission by badge.

Mar. 31 - Apr. 4

Annual Biology Research Spring Conference: Riverside Motor Lodge, Gatlinburg.

April 3

Chemical Technology Division Seminar: Reprocessing of LMFBR Fuel: "Head-End Studies," C. D. Watson; "Dissolver Studies," R. B. Heimdahl; "Iodox Studies for Removal of Iodine from Air Streams," B. A. Hannaford. Central Auditorium, Building 4500N, 3 p.m.

COMMUNITY

March 24

Oak Ridge Civic Music Association Coffee Concert. Civic Center, 8:15 p.m. No admission charge.

March 27

Oak Ridge Civic Music Association presents the Hope College Symphonette (Holland, Mich.) Robertsville Junior High School, 8:15 p.m. Admission: adults $1.50; students $.50.

March 30-31

Junior Playhouse presents: "Rags to Riches." Oak Ridge Playhouse, 1 and 3 p.m. Admission: $1.

RECREATIONOTES

VOLLEYBALL LEAGUE

The Pack and Over-the-hill gang continue to dominate volleyball action as the end of the season draws in sight.

League standings follow:

ATOMIC LEAGUE

Team	W	L
Pack	38	2
Hawks	42	3
The Gang	29	10
Taxi Squad	24	15
Old Men	16	26
The Quarks	16	26
Jokers	12	27
Electric Bananas	12	33
Funky Wambats	10	29
Rad-Fizz	10	35

NUCLEAR LEAGUE

Over-the-hill Gang	34	5
Pogo's	37	8
Newcomers	27	15
Anti-Quarks	24	15
Sloths	21	18
Bombers	18	18
Bawlers	22	26
Artie's Army	19	23
The Neutrals	11	37

ALL CARBIDE GOLF

Golfers should start finding partners for the up-coming golf leagues.

Leagues will be held at the following courses if enough teams are interested:

Southwest Point — Monday
Dead Horse Lake — Monday
Melton Hill — Tuesday
South Hills — Tuesday

Y-12 J-Shift and K-25 D-Shift will also have leagues.

More information will be provided in the next issue of the **Nuclear Division News.**

PADUCAH GOLFERS, NOTE

Paducah golfers interested in participating in the Tuesday evening golf league at Paxton Park should contact the Recreation Office, on PAX 335.

Y-12 BOWLING

C League lead still goes to the Rollmasters, rolling five points above the Rounders, the Mini Strikes and the Sunflowers. The Mini Strikes have rolled a 3128 handicap series for tops in that category.

The Markers have a one-point edge in Classic standings, with the Mets and Has Beens close behind. Frank Marlar's 284 handicap game and 703 series are high, naturally.

The Alley Cats keep a one point lead over the Hits & Misses as the season nears its end. C. R. Lively rolled a 642 handicap series lately, and Loyd Spray took a 264 game for highs.

ORNL BOWLING

The Ten Pins keep a 10-point lead over the ORAU team in A League standings.

The Pin Heads put in on the line in C standings, 12 and one-half points out front from the Be-Bops. K. A. Keathley rolled a 642 series recently, as A. C. Tinley, Damagers, rolled a 229 game.

The ORNL Ladies League still belongs to the Pick-Ups, four games ahead of the Mousechasers.

The Oops team hangs onto the lead in the Carbide Family Mixed Bowling League.

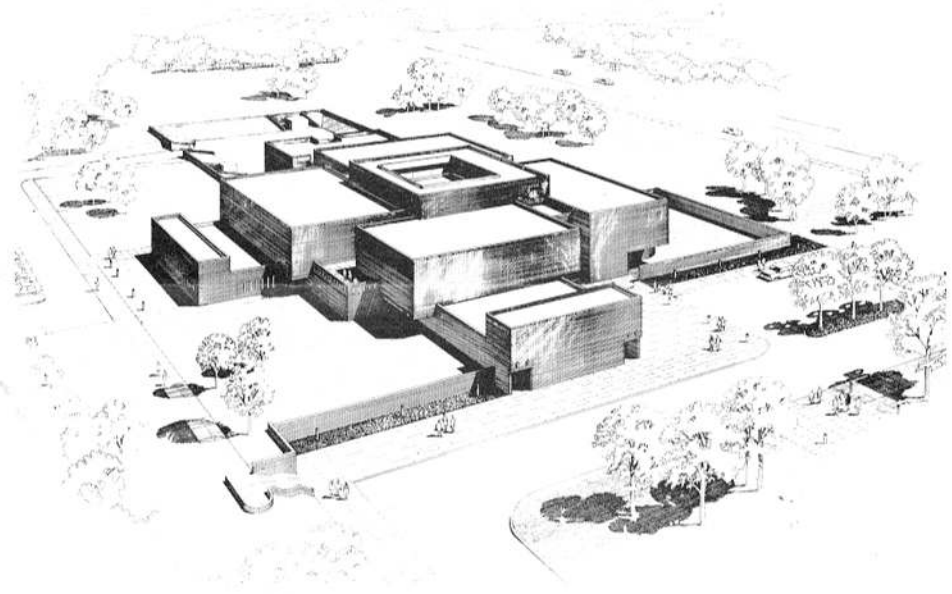
ORGDP BOWLING

The Uptowners keep a six-point lead in the ORGDP Women's League. The Spotters, who are tied with the Woodbees for fourth place, hold a high series of 2242 thus far in the league race.

Double X men still claim top spot in the Tuesday League. The Atoms 3071 series still stands as high, as N. F. Kuneman's handicap rolling recently gave him a 239 game, a 648 series.

The Wednesday League stays in the possession of the Sandbaggers, only a breath ahead of the Protectors. Seth Wheatley recently burned alleys with a 247 game, 694 handicap series!

WALLS GOING UP — Winter construction continues on the Museum of Atomic Energy in Oak Ridge, as the $3.5 million structure begins to take shape. The building will contain approximately 52,000 square feet, and will accommodate up to 10,000 visitors a day, Oak Ridge Associated Universities officials estimate. ORAU will administer the museum for the Atomic Energy Commission.



ARTIST'S CONCEPT — What the new museum will ultimately look like is shown in this drawing. The building, now under construction, is on an elevated 17-acre site on South Illinois and South Tulane Avenues in Oak Ridge, across the street from the Main Post Office. The museum, set for dedication in the fall, will attract added tourists to the area.

PARK OPENING SET — The Clark Center Recreation Park will open its gates March 30. The swimming area, seen above, will not be manned by lifeguards, however, until June. After the March opening, attendants will be on hand to issue reservations for gatherings. Camping has been eliminated at the park.

BASKETBALL LEAGUE

Ties in both leagues of basketball play are the big news of the week, as the four teams square off for the final lap of play.

League standings follow:

ATOMIC LEAGUE

Team	W	L
Has Beens	17	1
G. B. U.'s	17	1
Testers	13	5
Bombers	11	6
Grundy Express	10	7
Underdogs	6	11
Electrodes	5	13
73'ers	5	12
Possum Soup	4	14

NUCLEAR LEAGUE

Wildcats	15	3
Bottlenecks	15	3
COE	14	4
Rolling Bones	13	5
Chi-Town Hustlers	10	8
H-Shift	7	11
The Gunners	6	12
Eco-Trolls	5	13
Just-For-Fun	4	14
Isomets	4	14

ATTENTION CHESS PLAYERS

The Paducah Community College is sponsoring sessions on chess each Wednesday at 8 p.m. in Room A-208, Rosenthal Hall. All Paducah employees are invited to attend. Experts and novices are both welcome.

Burchsted honored by health society

Clifford A. Burchsted, ORNL's Projects and Standards Engineering, has been appointed to Fellowship in the Council of the Royal Society of Health.

Fellowship in the society is limited to those of recognized achievement in some part of the field of health. Burchsted's appointment is in recognition of work in the cleaning of gaseous effluent from nuclear laboratories, fuel manufacturing works and power plants, and in his endeavors in engineering standardization related to that work.

Protecting lung defenses public health job

(Editor's Note: Dr. Lincoln alternates his regular column with "The Medicine Chest," where he answers questions from employees concerning their health in general. Questions are handled in strict confidence, as they are handled in our Question Box. Just address your question to "Medicine Chest," NUCLEAR DIVISION NEWS, Building 9704-2, Stop 20, or call the news editor in your plant, and give him your question on the telephone.)

By T. A. Lincoln, M.D.

Antibiotics and surgery have greatly reduced the toll from acute bacterial pneumonias and tuberculosis, but have not been successful in controlling chronic lung diseases and cancer. The main hope is protecting natural lung defenses, a public health job for the environmentalist and a personal job for the smoker.

Although lung cancer has risen from almost obscurity 40 years ago to its present number one place, chronic obstructive pulmonary disease (COPD - emphysema and chronic bronchitis) has risen at even a faster rate. In 1950, there was approximately one death from COPD to every 15 for lung cancer, while in 1967, there was one for every 2.6 lung cancer deaths. COPD is difficult to detect early, is slowly and insidiously progressive, and when finally detected, cannot be effectively treated. The only hope is to prevent entirely or at least slow down the progression of the disease once it has been detected.

Effects of pollutants

In the past, prevention has been couched in generalities. Even though the admonitions were specific, such as stopping cigarette smoking, the reasons were not clear. Now, the multifactoral effects of environmental pollutants, infections, allergies and genetic defects are much better understood than they were only two to three years ago.

Dr. Gareth Green, Professor of Medicine at the University of Vermont, who has written extensively on lung defenses, divides them into three general groups. First, there are the aerodynamic defenses during which inhaled air is distributed over a vast surface where many toxic materials can be removed. Second, there are several transport systems which remove chemical or particulate material deposited on the mucous membrane of the bronchial tubes. Third, the many particles which are deposited in the deep lung may be processed through several systems before they are finally removed.

In a healthy lung, the 350-500 cc's of air taken in with each breath are spread out over the surface of millions of air sacs, an area equivalent to the size of a tennis court, in just a few seconds. In the nose the air is subjected to turbulence as it swirls around the nasal turbinates with their warm, moist and sticky surfaces. The air is rapidly warmed and humidified, even in extremely cold weather.

Nasal hairs filter material

Large particulate material, for example, sawdust, is filtered out by nasal hairs. Dust particles larger than about 2-3 microns in diameter (1 micron = 1 millionth of an inch) stick on the mucous membrane which lines the nose, throat, and bronchial tubes. Smaller particles are rapidly carried deeply into the lung to a point where the diameter of the bronchiolar ducts suddenly increases, slowing down the movement of the air stream. Here most of the smaller particles settle before they reach the actual air sac where the crucial oxygen exchange occurs.

Particles and chemicals deposited in the mucous blanket which lines the respiratory tract are swept backward from the nose or upward from the lung by tiny air cells called cilia and swallowed. Many particles are engulfed by cells called macrophages. These cells then move through the walls of the ducts and around tiny blood vessels where they may stop or they can be transported to regional lymph nodes. The pigmented lungs of smokers or miners are due to the long-term retention of inhaled dust in the lung. One reason for the extremely small amount of long lived radioisotopes permitted in the lung is the accumulation which occurs in the pulmonary lymph nodes, where it may remain for the rest of the life of the individual.

Gases damage system

Toxic material such as tobacco smoke greatly slows down the movement of the mucous blanket. Soluble gases such as sulfur dioxide are absorbed in the upper airways and the resulting irritant solution damages the particle transport system. An excess secretion of mucuous is often produced, which sometimes almost incapacitates it. Insoluble gases, such as nitrogen dioxide or ozone, penetrate deep within the lung and may damage the respiratory membrane where oxygen exchange occurs. Soluble gases may be absorbed on tiny particles and thereby transported deep within the lung. Here acid may be released damaging or destroying the delicate air sacs. Even if a particle is engulfed by a macrophage, the absorbed chemicals inhibit cell enzymes which are an essential part of deep lung defenses. For example, cigarette smoke and ozone depress several enzyme systems.

When one considers that the normal lung defenses can easily be overwhelmed by excess exposure to toxic irritants, can be impaired for weeks after a virus infection of the lung, or can inheritently be substandard because of a genetic defect, the importance of protecting the lungs becomes obvious. It is easy to worry about environmental and occupational exposures, but cigarette smoke is vastly more important. For example, smokers take in 1500 times the threshold limit value of acrolein, a potent irritant, and 840 times the amount of carbon monoxide allowed in industry every time they take a puff.

SAFETY AWARDS PASSED OUT — Jimmy R. Davis, left, and Wilbert D. Minter issue safety awards that were accumulated in the general fund for 1973. The Y-12 Plant has established one of the country's outstanding safety records through the years.

Division Deaths

Raymond D. Stokes, a maintenance supervisor at ORNL, died March 13 in the Oak Ridge Hospital.

Mr. Stokes had worked at ORNL for over 23 years, and was previously employed by Tennessee Eastman at ORGDP.

Mr. Stokes

Mr. Stokes was a member of the Masons, and was a Shriner. He was an avid sportsman and as a hobby, did cabinet woodwork in his home.

Survivors include his wife, Mrs. Alice Stokes, 154 Warrior Circle, Oak Ridge; daughters, Mrs. Guyda Green and Mrs. Clint Comly; sons, Richard, Bill and Paul Stokes; a brother, Vernon Stokes; sisters, Mrs. Basil Bone and Mrs. Albert Webb; 12 grandchildren and several nieces and nephews.

Funeral services were held March 15 in the chapel of Weatherford Mortuary with the Rev. G.E. Nester officiating. Interment followed in Anderson Memorial Gardens.

ORNL RETIREE DIES

Lawrence A. Shadden died January 25. Mr. Shadden worked in ORNL's Plant and Equipment Division from 1949 until his retirement in 1963. He lived at Route 2, Rockwood.

PADUCAH COLLEGE ALUMNI

The Paducah Junior College-Paducah Community College Alumni Association is recruiting members in the Paducah area. There are Paducah Plant employees eligible to belong to the society. Interested parties should contact Eleanor Coffman at the Alumni Association at the college.

Supervisory courses will be given at U.T.

The Office of Continuing Education, University of Tennessee, is offering two developmental programs for supervisors and managers during the spring academic quarter.

Managerial and Supervisory Concepts will meet on Monday nights from 7 to 9 p.m., April 1 through June 3, in Knoxville. Enrollment fee is $60 and the class will be limited to 20 people.

Advanced Managerial and Supervisory Concepts will meet in Oak Ridge on Tuesday nights, April 2 through June 4, 7 to 9 p.m. Enrollment will be limited and the fee is $75. Both courses will be coordinated by Donald J. Vernisce of the College of Business Administration.

Registrations will be accepted through April 2, and further information may be obtained by calling Mrs. Ericsson at 947-5361 in Knoxville.

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A Woman's Word

GUESS WHO'S COOKING THE DINNER?

(Editor's Note: It is proposed that "A Woman's Word" be a regular feature in the Nuclear Division News. *Comments are invited, as well as contributions. Full credit will, of course, be given the author.)*

The age-old controversy of "who does what" in households where both husband and wife hold outside jobs has become increasingly profound with the growing number of women entering the labor force. This increase is due partly to the women's liberation movement, but in a larger sense to the enactment of federal legislation and establishment of affirmative action programs which encourage (and enable) women to take more responsible jobs.

One husband and wife team has solved the problem of who does what at their house through a division of household tasks by natural selection. Their theory is based on the principal that each partner selects the tasks which he or she does best.

Husband cooks

It is this operating philosophy that has kept this particular couple happy - and the wife out of the kitchen. The husband does most of the cooking for the family of four.

The husband, a scientist-turned-administrator, used to cook once in a while and on weekends until the younger of his two sons entered high school, and his wife returned to work as a full-time accountant. He realized how hectic the job, household chores and cooking had become for his wife and suggested the idea. It really makes a lot of sense since he is not only talented at putting meals together, but finds that cooking relieves the tensions he has accumulated during a typical day at the office.

The wife, who calls her cooking "indifferent at best," says her husband's skills at the stove are "excellent."

Cooking is non-sexist

Although many men and women do not see eye to eye on all women's lib issues, most will agree that there is nothing "sexist" about cooking. Especially when one partner happens to be better at it.

The fact is that long before the feminist movement came on the scene, many people agreed that there was no biological basis for culinary expertise. Cooking has long been considered a most distinguished profession.

The Boy Scouts of America, in fact, report that for the past 64 years they have tried to see that every scout had some cook-out instructions (although a tenderfoot here or there sometimes slipped by uninstructed). With more than 51 million boys trained, a great number of ex-Boy Scouts across the nation today stand prepared, at the very least, to boil an egg.

Exciting as woodworking

Raymond A. Sokolov, one of the country's most widely-read food editors, said that one possible reason for the increase in male cooks may be that some men are discovering for themselves that "there is no stigma to cooking." In fact, says Sokolov, "they may be finding that cooking can be at least as absorbing and exciting as building kits or woodworking."

A great number of cooking schools disclose that they are attracting more men students, as well as married couples interested in sharing gastronomic expertise.

From amateur to specialist

In some instances, circumstances dictate who does the cooking. For example, an out-of-work husband - in the recent employment downturn - may have kept the kitchen fires burning while his spouse was out working.

Regardless of the circumstances, be they everyday cooks, Sunday brunch virtuosos or backyard barbecue specialists, in these liberated times any male who aspires toward the culinary arts, probably has the blessings of his wife, as well as the best wishes of his fellow men.

R.A.M.

QUESTION BOX

(Continued from page 1)

union should act as collection agent for an insurance company since this might divert its attention from its principal activity. However, since the credit union involved will make this decision, your question should be directed to your credit union.

QUESTION: Why can't each employee be given a choice of whether he wants to participate in the savings award lottery or not? If he doesn't care to participate in the drawings, then he would receive the entire amount of his award at the end of the year as in the past. This doesn't seem like a complicated scheme and I think it would make a lot of employees happy.

ANSWER: This question and several previous ones suggest revising the Safety Incentive Plan. The present plan will be continued through 1974. However, your comment and others received in the future will be forwarded to our Safety Directors who will be making recommendations for possible changes in the plan for 1975.

WANTED

ORNL

RIDE from South Knoxville to either portal, 8 a.m. shift. John Pritchard, 577-1594.

We will hereafter believe less history than ever, now that we have seen how it is made.

Next Issue

The next issue will be dated April 4. The deadline is March 27.

ORGDP's traffic problems

(Continued from page 1)

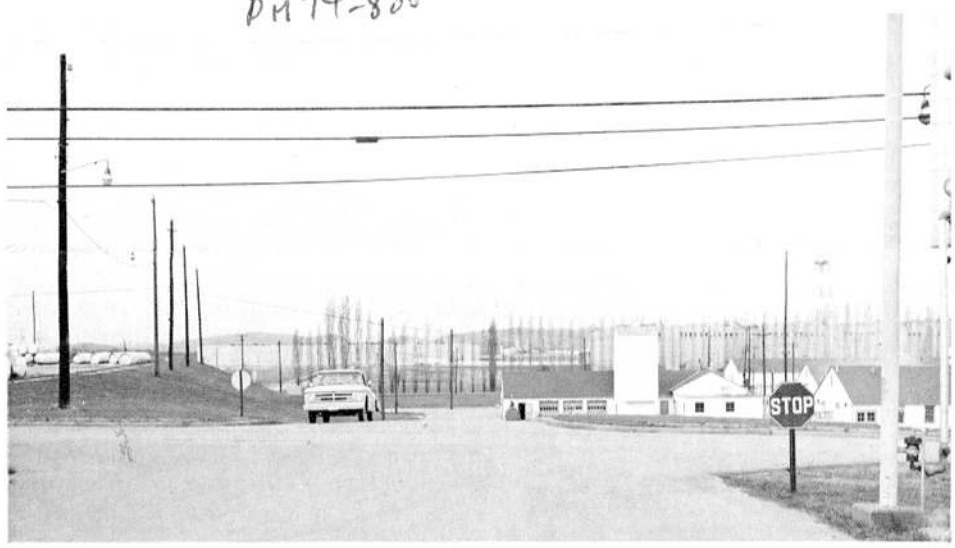
The elimination of traffic hazards and the protection of employees at the AEC plants are high priorities in overall planning. Much has been done at ORGDP to improve the situation and much more will be done.

Employees can help with the development of a good attitude toward traffic safety and the maintenance of a spirit of cooperation. These traffic problems can be greatly minimized. Carpool participation can be very instrumental in easing traffic pains.

PH 74-802

ADDITIONAL SPACE — More parking space has been provided in a lot west of the ORGDP site. Additional spaces have been added in existing lots as well.

PH 74-800



IMPROVED MARKINGS — Intersections such as this inside the ORGDP complex have been upgraded to give better warnings of traffic hazards.

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